COST ANALYSIS STRATEGY ASSESSMENT: THE COMPLETE LIFE-CYCLE COST ANALYSIS TOOL

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Today's cost-conscious Army is doing everything it can to drive home the point that program managers (PMs) must make Total Ownership Cost (TOC) a high priority during the systems acquisition process. PMs have been given a mandate to aggressively pursue savings throughout their systems' life cycles and to seek cost realism. The operations and support phase of a typical system represents 70 to 80 percent of the overall cost and 75 to 90 percent of the system life. Thus, the most lucrative opportunity for influencing total life-cycle cost occurs during this phase. In addition, because of the greatly extended service lives of weapon systems and end items, this phase offers great potential for major cost savings.

However, life-cycle cost analysis is a monumental challenge for a system in development. Implementing a successful life-cycle cost analysis effort requires an effective automated tool. A thorough life-cycle cost study is complex and virtually impossible without the aid of comprehensive software capable of addressing all cost areas. In addition, the software must have extensive built-in analytical capabilities. This requirement is particularly important for systems in development when trade-off studies are performed. The results of trade-off studies guide the engineering process in terms of cost, performance, schedule, and supportability.

Numerous software models are available for calculating life-cycle cost estimates. Although many of these models are comprehensive, they have typically been designed only to assist the budgeting, finance, and accounting communities. Few of the available models perform supportability-related trade-off analyses. However, the Cost Analysis Strategy Assessment (CASA) model is ideal for conducting such trade-offs as well as sensitivity analyses and comparing different systems and alternative support structures.

The CASA model is a life-cycle cost decision support tool for PMs responsible for materiel acquisition systems. In particular, the CASA model addresses the TOC for the objective system including research, development, test, and evaluation; manufacturing development and production; and the entire operational life during which the system must be supported in the field. Virtually every cost associated with a system is covered by CASA, whether one-time, recurring, or annual.

CASA's flexibility accommodates any tailoring the analyst might need. One great benefit of CASA is that it prompts the analyst to address costs that might otherwise be overlooked (e.g., storage containers, manufacturing test equipment, or recurring training). The CASA model uses numerous validated life-cycle cost equations to compute costs and resource requirements. Users have commented that the algorithms within CASA are particularly useful when developing software and allocating repair parts. Information on algorithms and definitions of the variables used by the CASA model are readily available for the user to review.

Cost models typically have numerous categories where numbers can be plugged in. All models are proficient at totaling up the costs. The advantage of CASA is its extensive analytical capabilities. In addition to calculating life-cycle cost estimates and identifying cost drivers, CASA also performs many types of trade-off analyses. PMs can use CASA to optimize the distribution of spares, conduct reliability growth studies, examine support costs by individual line replaceable units, assist in selecting a warranty approach, and more.

A wide range of sensitivity analyses can also be conducted on the various cost parameters included within the CASA model. With this capability, the user can examine the cost impact of varying factors such as support equipment availability or the turnaround time for spare parts. The production rate and quantity buy analysis option assists users in determining the optimum quantity of items to procure.

Another one of CASA's most impressive features is the large variety of reports and graphs that can be produced. Report data are presented in an easy-to-understand, spreadsheet format. The CASA user can choose almost any type of chart imaginable for presenting data in an effective, easy-to-interpret manner. The robust CASA life-cycle cost model can consider life-cycle studies for projects that last up to 50 years and accommodate customized maintenance schemes with up to 10 levels. Finally, the online tutorial makes CASA easy for even novice software users.

CASA 2000 is a powerful tool for developing life-cycle cost estimates and gaining a better understanding of the resultant cost figures through trade-off and sensitivity analyses. CASA 2000 has more than 700 registered users throughout DOD and in the private sector. Additional information on CASA, including user training and registration for CASA 2000 software is available on the CASA Web site at **http://www.logsa.army.mil/alc/casa**; by writing to USAMC LOGSA, ATTN: AMXLS-AI, Bldg. 5307, Redstone Arsenal, AL 35898-7466; or by calling DSN 645-9782/9886, (256) 955-9782/9886.

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